SPENCER & SPENCER
PROFESSIONAL ASSOCIATION

Attorneys and Counselors at Law

C.E. SPENCER (1849-1921)
C.W.F. SPENCER (1876-1956)
C.W.F. SPENCER, JR. (1911-1985)
EMIL W. WALD (1934-2011)
W.C. SPENCER (1928-2018)
WILLIAM L. "RED" FERGUSON †
PAUL W. DILLINGHAM
W. MARK WHITE*
W. CHAPLIN SPENCER, JR.*
R. BRENT THOMPKINS*
JEREMY D. MELVILLE*
SHIRYL R. BALLARD*
CATHY LIGHTSEY WEAVER

† Of Counsel
* Also admitted in NC

SUITE 200
226 EAST MAIN STREET

P.O. BOX 790
ROCK HILL, S.C. 29731-6790

Telephone
803-327-7191

Telecopier
803-327-3868

Website
www.spencerfirm.com

June 10, 2021

Joceyln G. Boyd, Esquire
Chief Clerk and Administrator
Public Service Commission of SC
101 Executive Center Drive
Suite 100
Columbia, SC 29210

In re: South Carolina Office of Regulatory Staff's Motion to Solicit Comments from Utilities and Other Interested Stakeholders Regarding Measures to be Taken to Mitigate Impact of Threats to Safe and Reliable Utility Service
PSC Docket No. 2021-66-A

Dear Ms. Boyd:

Governor Henry McMaster recently requested that the South Carolina Office of Regulatory Staff "undertake a comprehensive review of our State's public and private power grid to evaluate its ability to withstand potential ice storms and other dangerous winter weather conditions" (the "Request"). On March 10, 2021, the South Carolina Public Service Commission ("SCPSC") issued an Order in the above-referenced action that, inter alia, encouraged the non-regulated natural gas authorities to participate in this process by responding to the Request. Patriots Energy Group ("PEG") and its members, York County Natural Gas Authority ("YCNGA"), Chester County Natural Gas Authority ("CCNGA"), and Lancaster County Natural Gas Authority ("LCNGA") (collectively, "Members"), as South Carolina non-regulated gas utilities, hereby respond to the Request by collectively providing the SCPSC with information

on their reliability and resilience as they provide affordable natural gas service safely to their customers.

Entity Form, Formation, and Purpose

CCNGA, LCNGA, and YCNGA are natural gas authorities with service areas located in the north central region of South Carolina. The General Assembly of South Carolina created the Members in 1954 to provide retail natural gas service to customers within their respective service territories. As such, the Members are political subdivisions of the State of South Carolina and are considered special-purpose districts. Members do not have the authority to levy taxes, and all of their revenues are derived from the sale and distribution of natural gas.

The Members organized PEG in April 2003 pursuant to the South Carolina Joint Agency Act as a public body corporate and politic. Their purpose in so doing was to achieve lower cost of operations and greater efficiencies, safety, and reliability in the competitive natural gas market.

Operation

PEG acquires natural gas supplies for the full requirements of the Members and manages their transportation and storage capacity via interstate pipelines owned by Carolina Gas Transmission, LLC ("CGT"), a division of Berkshire Hathaway, and Williams-Transcontinental Gas Pipe Line ("Transco"). PEG provides all services necessary for the delivery of natural gas to the Members including, but not limited to, arrangement of transportation, nominations, scheduling, balancing, confirmation, storage, and load management.

PEG also provides the planning and development of a natural gas supply/capacity program for the Members with the objective of providing reliable and economical delivery of natural gas to the Members. Pursuant to their membership agreements, PEG collectively provides natural gas supply, engineering, legal, financial, and capacity consulting and procurement, together with such other services as may be necessary or appropriate to determine the feasibility of the natural gas supply and capacity program.

The "Systems"

PEG

PEG's natural gas system (the "PEG System") consists of approximately 69 miles of transmission pipeline (the "PEG Pipeline"), 4 to 16-inch, 16.97 miles of distribution pipeline 3 to 8-inch. PEG has three points of connection at which to receive gas from Transco, seventeen points of connection to receive gas from CGT, and seventeen delivery points to its Members.

YCNGA

YCNGA owns and operates a natural gas distribution system (the "YCNGA System") which commenced service in 1957 and presently serves approximately 70,065 active South Carolina customers in York County and eastern Cherokee County. The great majority of its customers are located in York County where it is the sole provider of natural gas. As of December 31, 2020, the YCNGA System consisted of six purchase points connected to the main of CGT and ten connected to the PEG Pipeline, over 1,816.35 miles of 2 to 8-inch diameter mains, and approximately 72,819 service lines.

LCNGA

LCNGA owns and operates a natural gas distribution system (the "LCNGA System") which commenced service in 1957 and presently serves 30,091 active South Carolina customers in Lancaster County and a small portion of northern Kershaw County. LCNGA is the sole provider of natural gas in its service area. As of December 31, 2020, the LCNGA System included four delivery points connected to the natural gas mains of CGT and four delivery points connected to the PEG Pipeline, approximately 1,047 miles of 2 to 8-inch diameter mains, and approximately 31,984 service lines.

CCNGA

CCNGA owns and operates a natural gas distribution system (the "CCNGA System") which commenced service in 1957 and presently serves 7,556 South Carolina active customers in Chester County and a small portion of Fairfield County. CCNGA is the sole provider of natural gas in its service area. As of December 31, 2020, the CCNGA System consisted of five purchase points connected to the CGT natural gas mains and three purchase points connected to the PEG Pipeline, approximately 600 miles of 2 to 8-inch diameter mains, and approximately 10,180 service lines.

Member MMBtu Sales

Industrial interruptible sales for each Member are subject to curtailment which is generally precipitated by colder weather; accordingly, weather may have a significant impact on the ratio of firm sales to interruptible sales. The following charts show Member MMBtu sales since 2015.

YCNGA

Fiscal Year	Firm (MMBtu)	Interruptible (MMBtu)	Total
2015	$4,643,019	$2,928,493	$7,571,512
2016	3,942,256	3,325,018	7,267,274
2017	3,825,436	3,010,837	6,836,273
2018	4,717,235	2,888,307	7,605,542
2019	4,737,830	3,155,550	7,893,380
2020	4,480,514	2,747,770	7,228,284

LCNGA

Fiscal Year	Firm (MMBtu)	Interruptible (MMBtu)	Total
2015	$1,426,240	$451,930	$1,878,170
2016	1,187,452	489,892	1,677,344
2017	1,179,109	512,098	1,691,207
2018	1,561,379	513,726	2,075,105
2019	1,535,584	485,451	2,021,035
2020	1,459,672	465,821	1,925,493

CCNGA

Fiscal Year	Firm (MMBtu)	Interruptible (MMBtu)	Total
2015	$698,417	$2,908,422	$3,606,839
2016	728,640	2,925,402	3,654,042
2017	722,113	2,893,936	3,616,049
2018	851,363	3,159,955	4,011,318
2019	834,789	3,249,860	4,084,649
2020	953,396	2,889,798	3,843,194

PEG and Member Gas Supply

Members are able to access gas from either the South or the Northeast, which provides them with exceptional reliability versus receiving gas from just one region. Most of PEG's natural gas supply is delivered either to Transco's Station 65 pool (Zone 3) at the Louisiana/Mississippi border or Station 85 pool (Zone 4) in western Alabama, or by delivered service to the PEG delivery point on Transco or CGT for redelivery.

At Stations 65 and 85, PEG purchases the gas and transports it on PEG's Transco interstate capacity to delivery points on Transco in Zone 5. PEG also redelivers the gas to a CGT delivery point on Transco near Grover, North Carolina (Zone 5). The gas from CGT is redelivered to delivery points on CGT's system belonging to a Member or the PEG Pipeline.

Annually, PEG purchases nearly 80% or more of its natural gas supply under long-term (15-30 years) prepay contracts at below market rates. PEG also has delivered (seasonal), peaking (10-day), call option (15-days), and storage (call when needed) services on Transco that delivers the gas directly to the delivery points of PEG, CGT, or Transco Station 65/85. Any remaining gas is purchased on a monthly or daily spot market basis. This mix of services provides PEG and its Members with an affordable and reliable gas supply.

Pricing of Gas

Natural gas is made up of two specific commodities. One is the physical natural gas supply which can be bought, sold, traded, or hedged. The monthly price is based on the closing price of gas traded on the New York Mercantile Exchange ("NYMEX").

Natural gas is known to be one of the most volatile commodities traded. For instance, on April 6, 2021, the NYMEX price of gas for May 2021 was $2.456 per Dekatherm (dt); on April 28, 2021, the day the NYMEX closed for May 2021, the price was $2.916—up almost 19% in just 22 days. The price of gas varies based on weather (hot or cold), supply, hurricanes, export levels, storage levels, and supply disruptions. If a buyer purchases daily gas, it is thus at the mercy of market vagaries, such as in February 2021

when the weather in Texas caused shortages. PEG was not forced to purchase at that price as its winter supply plan was in place.

On a daily basis, PEG and its Members have to determine how much gas the systems require and have to schedule that gas from natural gas suppliers. Gas supply volumes and prices can be locked in daily, monthly, seasonally, annually, or for multiple years. Moreover, PEG and Members are able to use tax-exempt financing to buy thirty years of natural gas supply, which in turn provides the Systems with a discount off the NYMEX price – a very important consideration for both Members and their customers.

Per the annual audit of Members, the cost of natural gas purchases/capacity for the last fiscal year was as follows:

Member	Fiscal Year Ending	Cost of Gas
YCNGA	31-Aug	$32,358,981
LCNGA	30-Jun	11,328,447
CCNGA	31-Aug	11,393,663
TOTAL		**$55,081,091**

The cost of gas represents the largest expense for each Member, constituting 64.5% of total expenses and 58.0% of total gross revenue.

Gas Capacity

The second gas commodity is the capacity in the interstate pipelines that allows PEG and its Members to transport natural gas from the country's production areas to South Carolina and on to Members' service territories. Capacity can also be bought, sold, and traded. PEG must determine on a daily basis how much capacity will be needed on the interstate pipeline network to supply its Member System requirements, and that capacity has to be adjusted daily.

Most of the contracts for capacity in the pipelines are long-term. The right to capacity has to be paid year-round, even though all of the capacity does not get used unless the weather is cold. Due to this year-round cost, the monthly financial statements of

each Member usually show a positive net return on investment only during the five winter months.

The capacity cost can be mitigated by releasing capacity during the summer or "shoulder" months, but only at cents on the dollar. On the other hand, during the winter if Members require more long-term capacity, they contract for "delivered service," which is a bundled service including both supply and capacity. If the long-term and delivered services are still not enough, "peaking service" can be obtained, which is a "called" service available ten to fifteen days each winter.

Finally, "storage service" is available. Members retain natural gas storage space in natural gas storage fields on the interstate pipeline network. When needed during load peaks, this gas can be pulled. There is also storage service in the production area if needed to replace a service that is unable to be delivered on a specific day due to force majeure.

Gas Authority Infrastructure

Each Member is always evaluating and looking to add to its local infrastructure. PEG brings gas from the wellhead to a gathering system and then to an interstate/intrastate pipeline, and then redelivers the gas to individual Member Systems. The infrastructure of such Systems is the last and most important piece to delivering the gas to the ultimate customers.

Potential Peak Day Volumes

PEG and its Members continually analyze their "Peak Day" requirements (coldest or consecutive coldest days of the year) and, each year, re-establish forecasts. This is especially important as they service a fast-growing region and must have enough assets in place – infrastructure, capacity, and supply – to meet the estimated gas load on a Peak Day. PEG has engaged outside consultants to assist with this analysis.

PEG and its Members have multiple discussions, both internally and externally, throughout the year on infrastructure projects, capacity, and supply requirements to meet each Member's potential Peak Day. (Infrastructure includes both Members' Systems and the PEG delivery system.) Interstate pipelines can take up to

five years to get approval from the Federal Energy Regulatory Commission ("FERC") for new capacity, while PEG and Members must daily address their infrastructure and capacity needs.

Self-Help Measures

There are three self-help measures available to Members during Peak Days or supply disruptions:

1. Utilizing Propane Air Plants at YCNGA and CCNGA. A propane air plant is a peak shavings facility that allows PEG and Members to supplement the natural gas stream with a propane-air mixture (that has similar characteristics to natural gas) from propane storage tanks. This service is very labor intensive because of the 24-hour per day monitoring requirement. At present, PEG does not factor the volumes of propane air that can be manufactured into the Peak Day requirements; thus, this measure is just a standby incremental peak day asset. The YCNGA plant can produce 4,000 dts of gas equivalent per day, and the CCNGA plant can produce 750 dts of gas equivalent per day.

2. Curtailing interruptible industrial customers that have alternate fuel facilities installed on site such as oil or propane. By curtailment, PEG can reduce its usage by 15,000 dts.

3. Packing the PEG Pipeline the day before cold weather starts and using the excess line pack on the day of extreme cold. This option creates minimal volumes but may be enough to fulfill requirements on a Peak Day.

Texas, February 2021

In February 2021, the natural gas supply situation in Texas was disrupted as a result of freeze-off and extraordinary conditions that slowed repairs, including the loss of electricity at the wellhead. When natural gas and oil come out of the ground, it is usually with water and other liquids, under pressure. During extreme cold, when under pressure regulation inside the gas stream, water and other liquids sometimes freeze. The Gulf of Mexico region has experienced freeze-offs before, just not to a widespread, specific area like Texas.

During this period, severe cold weather in large portions of the United States, primarily the Midwest and Southwest, led to historic increases in the daily price of natural gas, from around $3 per MMBtu to over $300 per MMBtu and, in at least one case, over $1,000 per MMBtu. Multiple factors led to these unprecedented increases: the severe cold weather both forced shutdowns in natural gas production in areas not accustomed to extreme cold weather, but also led to increased demand. Energy executives and industry representatives have testified that a lack of winterization throughout the natural gas supply chain, and a failure to ensure that power kept flowing to key parts of that chain when fuel was desperately needed, were key reasons that millions of Texans lost power for days in the bitter cold.

How Texas Affected the Members

On February 17, Texas Governor Greg Abbott took the extraordinary measure of directing the Railroad Commission of Texas ("RRC") to restrict out-of-state exports of natural gas produced in Texas through February 21. RRC issued a notice to operators to enforce Abbott's mandate.

Events in Texas affected PEG's natural gas supply to Station 65/85 when PEG's supplier issued a force majeure on its supply due to freeze-offs or loss of power; PEG lost about 3,500 dts per day of monthly spot supply. Instead of going to the marketplace to purchase additional gas supplies, which was hard to come by and very expensive as compared to the first-of-month index price [see following table], PEG used peaking services, call options, and storage services to mitigate any incremental cost or shortages for Members' Systems.

DAILY PRICES ON WILLIAMS-TRANSCO

	NYMEX	Station 65	Station 85	Zone 5 -South
Feb 2021 Index Daily Cash Price	$2.760	$2.830	$2.870	$3.010
14-Feb	$2.912	$5.940	$5.845	$5.910
15-Feb	$2.912	$5.940	$5.845	$5.910
16-Feb	$3.129	$5.940	$5.845	$5.910
17-Feb	$3.219	$17.635	$18.445	$19.165
18-Feb	$3.082	$16.425	$14.720	$17.155
19-Feb	$3.069	$5.950	$6.040	$6.285
20-Feb	$3.069	$5.290	$5.495	$5.645
21-Feb	$3.069	$5.290	$5.495	$5.645

In response to the shortage, PEG took the following actions:

- maximized its withdrawals from its Washington Storage Service in Mississippi to replace the flowing gas;
- pulled storage from its General Firm Storage Service in Pennsylvania and LNG Firm Storage volumes in New Jersey;
- exercised its 15-day call option and maximized its 10-day peaking services to balance the system (i.e., supply v. demand);
- used its pipeline on February 17 (when CGT did not have an "operational flow order" ("OFO") in place) to pack the system and utilize the line pack on February 18 as a cushion.

During this period, PEG and Members were under OFOs from both of the interstate pipelines. An OFO is a mechanism to protect the operational integrity of the pipeline. Pipelines may issue and implement system-wide or customer-specific OFOs in the event of high or low pipeline inventory. OFOs require shippers to take action to balance their supply with their customers' usage on a daily basis within a specified tolerance band. Shippers may deliver additional supply or limit supply delivered to match usage. Out of balance suppliers that are out of tolerance are subject to punitive penalties from the pipelines.

Could it happen here?

There is no natural gas production in South Carolina, Georgia, or North Carolina, and South Carolina is some distance away from the production areas in the Gulf of Mexico and Northeast Marcellus Shale regions. Nearly all liquids are removed from the Natural Gas Stream before PEG takes possession at its delivery points. Transco has supply on both ends (south and northeast) of its pipeline, and it is a bi-directional pipeline. Accordingly, freeze-offs are not an issue in South Carolina.

August 2005

Supply here was disrupted in 2005, during Hurricanes Rita and Katrina, but those events occurred in August during very warm weather. That month, PEG opted to purchase a large percentage of supply from a LNG Import terminal in Savannah, Georgia, which allowed Members to experience only a minimal supply impact, although prices rose very high. Today, more natural gas comes from the Northeast rather than the Gulf of Mexico region. Thus, Members are more likely to suffer a shortage of pipeline capacity than of natural gas supply.

January 2014

The polar vortex of 2014 was the first time that daily natural gas prices spiked. Prices on January 8, 2014, peaked at $118.00/dt in Zone 5 on Transco. PEG and Members called upon all of their assets and had to curtail most of their interruptible customers to avoid most of the extreme cost. After the winter of 2013-2014, PEG decided to purchase more seasonal (November-March) services and lock in peaking service prices before each winter and no longer depends on daily priced gas to balance the system.

"Penalty gas" had been cheaper than the daily price of gas, but after this polar vortex, interstate pipelines filed tariff changes to enhance penalties on overrun usages. Penalties prior to January 2014 were more of a "slap on the wrist" and tied to the NYMEX price of gas, which does not move with the local daily cash price. Now, the $118.00 gas price of January 8, 2014, would be $354.00/dt, and 1,000 dts overage would cost $354,000.

January 2018

The extreme cold weather that hit Texas from February 9 through 20 was similar to the weather that Members experienced in

their service territories during January 2018. December 31, 2017, through January 8, 2018, was the third coldest nine-day period since 1977. PEG and Members used all of their assets during this period to supply customers without incident. Members were able to serve all the Firm Gas load and a large portion of interruptible gas load with very limited incremental cost. Because of using nearly all of their peaking services during this event, they decided to contract for additional peaking services for February 2018 — which ended up as the warmest February on record.

In Response to Texas 2021

In response to the Texas cold weather crisis, the Systems have worked with the national association, the American Public Gas Association ("APGA"), to formally request that the Department of Energy and FERC begin an immediate investigation into the unprecedented rise in natural gas prices. It is crucial to ensure that the price increases of natural gas were the result of market forces rather than manipulation or profiteering. PEG customers and communities must be protected from unwarranted price increases.

These price increases, along with increases in demand, placed strains on natural gas systems, and some systems had no choice but to purchase gas at the inflated prices or pay even steeper penalties to ensure supply to their customers. In one case, a municipal utility spent its monthly gas budget *each day* over President's Day weekend. In another instance, a joint action agency expended three times its annual gas purchasing budget just to buy gas for its customers for four days.

The Systems worked with APGA to send a letter to President Joe Biden supporting an Emergency Disaster Declaration for impacted regions of the country. They also requested that federal funding be made available to assist public natural gas systems and their communities to help mitigate the impact of the historic price increases.

More on Price and Supply

Producers generally do not benefit from the short-lived price spikes that occur during freeze-offs because they have less gas to sell. What compounds matters, and exposes producers to losses, is that they are often required to buy gas during these events. Both buyers and sellers in gas and power markets contract for most of their base volumes in advance, usually for the month, leaving only "swing" volumes to be transacted day by day. This acts as a hedge for both parties, reducing exposure to more volatile daily spot prices. Most volumes for February were sold at a price determined during the last week of January. As freeze-offs occurred, many producers, rather than just being unable to provide swing volume, could not even meet their base contractual volumes. As a result, a record number of force majeure suits have been filed.

How to Avoid a Crisis

If larger gas facilities had been winterized and production stayed online, the blackouts might have been "rolled" and lasted only a few hours per household, rather than for days. There are ways to increase reliability, but they will come at a cost. The cheapest and quickest way – more realistic than winterizing, given the economic incentives – would be to build more natural gas storage facilities. Storage facilities performed well during this latest crisis and served as a vital source of supply.

Being Pro-Active

GridEx

PEG and its Members have participated in "GridEx," the biennial grid security exercise in North America for electric utilities, related critical industries, and government partners. Participants can engage in GridEx from their regular work locations during the two-day exercise. A participant simulates the actions it would take during an actual event under its organization's established incident response plan. The participants share information on the status of grid operations both internally and externally.

Mock Emergency Drill and Table Top Exercises

Every year, PEG and Members participate in either an emergency table top exercise or a simulated emergency event with other first

responders. Most of these events have been related to third party damage. Just this April, YCNGA conducted a table top exercise replicating the events that happened in Aspen, Colorado in December 2020, where natural gas supply was vandalized.

In Conclusion

The Members—

- spend a considerable time on evaluating capacity, infrastructure, and gas supply—annually, seasonally, monthly, and daily—for events like Texas 2021
- have some of the most competitive prices in the Southeast
- take safety and reliability very seriously
- have experienced weather extremes in the past and made adjustments to those events
- strive always to (i) prepare for the worst type of weather or event and (ii) control all of the things that can be controlled.

They believe that they are prepared for extreme weather and other events in South Carolina.

On behalf of PEG and its Members, I thank you for the opportunity to provide comments responsive to the Request. If you need any additional information, please do not hesitate to contact me.

Jocelyn G. Boyd, Esquire
June 10, 2021

Sincerely,

SPENCER & SPENCER, P.A.

Paul W. Dillingham